

Translation

PATENT COOPERATION TREATY

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PCT/JP2003/014371



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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference JBS-39-PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2003/014371	International filing date (day/month/year) 12 November 2003 (12.11.2003)	Priority date (day/month/year) 12 November 2002 (12.11.2002)
International Patent Classification (IPC) or national classification and IPC C04B 35/573		
Applicant BRIDGESTONE CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>9</u> sheets, as follows: <div style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input checked="" type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application</div>

Date of submission of the demand 22 April 2004 (22.04.2004)	Date of completion of this report 13 September 2004 (13.09.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages \_\_\_\_\_ 1, 4-17, 21 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ 2, 3, 18-20/1 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 23 August 2004 (23.08.2004)
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- pages \_\_\_\_\_ 1-4 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ 5-11 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 23 August 2004 (23.08.2004)
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- pages \_\_\_\_\_ 1, 2 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-11	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

### 2. Citations and explanations

Document 1: JP 37-953 B1 (The Carborundum Company), 26 April 1962; page 2, left column, paragraph 2 to page 3, left column, paragraph 1

The inventions set forth in claims 1-11 do not involve an inventive step in the light of document 1, cited in the international search report. Document 1 discloses a process for producing a porous silicon carbide product which includes: formation of an initial porous material from silicon carbide and elemental silicon, formation of a product by moulding this, and heating the product at a temperature close to 1350°C in a carbonaceous atmosphere; carbonisation of the resulting structure by impregnating a carbon source into the pores and then heating, so that the pores are filled with carbon as a result; infiltration of silicon into the moulded material filled with carbon and reaction with the carbon inside the pores of the material to produce silicon carbide; and causing recrystallization by maintaining the product at a high temperature of about 2100 to 2300°C for a sufficiently long time. It is also indicated that by this means excess silicon inside the product or on the product is removed. However, it is mentioned that use of the recrystallization temperature is not a necessary

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condition, and that it is also possible to heat at a temperature lower than the recrystallization temperature. In addition, although no specific temperature or heating time are mentioned for heating at a temperature lower than the recrystallization temperature in the aforementioned production process, no special difficulty would be entailed in setting optimum or preferred values in order to obtain the desired properties. Moreover, no special effects which could not be predicted by a person skilled in the art appear to be offered by the numerical ranges in the inventions in the present application. Therefore, the inventions set forth in claims 4 and 8 could be derived easily by a person skilled in the art. Moreover, the products obtained by the aforementioned production process can be considered to be of sintered silicon carbide which comes substantially within the scope of the inventions in the present application. Therefore, the inventions set forth in claims 1-3, 5-7 and 9-11 could be derived easily by a person skilled in the art.

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## Box No. VI Certain documents cited

### 1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO 03/33434 A1 [EY]	24 April 2003 (24.04.2003)	15 October 2002 (15.10.2002)	16 October 2001 (16.10.2001)

### 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)